THE RUSH TO THE YUKON.

PROSPECTS OF A BIG CROWD IN THE GREAT PLACER DISPINGS.

Parties in Juneau Preparing to Tackle the Hange About the Middle of March-One Unusually Early Start-How to Get Into the Bastn-Requirements of a Prospector Stortes from the Alaska Diggings

JUNEAU, Alaska, Feb. 6.-The rush into the Yukon has already begun. The first party of miners to take the trail left Juneau about the middle of January. There were nine men in the party. This is an unusually early start for miners. A good many others in town are getting ready for the trip, intending to tackle the range about the middle of March. Every steamer that comes in from below now brings a party of old-timers and crowds of new men, all anxious to get in and get to work. The Yukon country is simost certain to be overcrowded this summer, surely as regards winter supplies, unless large outfits are taken in from

ere by the miners.

From all accounts received here from sections along the Pacific coast and in the East, Alaska is destined to receive a rush of people summer which will not be consistent with the present progress and the amount of work now golgg on. Alaska at present can support so many people and no more, and if the rush pans out according to present prospects there is likely to be considerable hardship. Alaska has no industries except mining at which the wage carner can make a decent livelihood, and unless a man has sufficient neans to carry him through, either in some isiness or for a season's prospecting, he had better steer clear of this country. It requires some capital to prospect for a mining claim, and when the claim is found it requires more capital to open it up. Gold nuggets do not grow on bushes, and it takes both a man's hands and his pockets to get the yellow metal In this country. There's an almighty lot of there, but it isn't to be had for the asking.

It is perhaps timely now to tell something explicit about the way of getting into the Yukon and the difficulties of the trip. No one should think of coming to Alaska who has not perfect health and has not, moreover, a more than ordinarily strong constitution, to enable him to withstand the atmospheric and climatic changes. In the Yukon district the thermometer has an annual range of 180°. There is a time in the short summer when it ranges about 110" above zero, and in the winter it frequently goes to 70° below, and sometimes more. No one should come to Alaska who has not

some practical knowledge of quartz and placer mining. Theories are all right in their way, and the theorist may stumble upon something good, but it is the practical who gets the Alaskan nugevery time. Every unfavorable report of Alaska mines can be traced directly to some disappointed tenderfoot who thought he could come up here and pick the gold off the bushes. Most of them didn't like it because they found they couldn't get nuggets as easily as they could salmon berries. Anybody can tell gold after the smelter gets through with it, but it isn't so easy to know where to look

If you are contemplating making the trip into the Yukon you want to give careful consideration to these things: The length of time you will have to stay in the country, the smount of money it will take, and the results which may be attained. Briefly, these things are: Time, three years; money, \$500; results, unlimited. Little can be accomplished less than three years' stay in the Yukon unless the prospector has marvellously good luck. A good part of the first season will be consumed in reaching the mines. Then if a claim is discovered and located only prelimipary work can be done. The second year the claim can be opened up well, and probably some money care be made. The third year is when the prospector may reasonably expect to get his profits.

No man ought to make the start into the Yukon basin with less than \$500 above what he expects to spend for the outfit which shall carry him through to the diggings. That is, if he goes in by way of Juneau and over the pass, he wants to have \$500 when he gets to Forty Mile or Circle City, or wherever it is he is going. If he goes by the way of St. Michael's and up the Yukon he wants to have just the same money. The read is a long one whichever way he goes. Supplies are expensive. The season is short, and Supplies are expensive. The season is short, and fortune is fickle. Failure to find rold the first season is likely to entail great hardship upon those whose funds are insufficient at the start. Not one in a hundred makes a paying strike the first season. The trading companies in the interior find a quick market for all their the interior find a quick market for all their goods at spot cash prices, and they refuse absolutely to give credit. Their supply is almost invariably behind the demand. These are the cold-blooded facts, and if you haven't got the money to meet them you had better not try to go into the Yukon basin looking for a fortune. You won't get it. But if you've got the money, and if you are strong and healthy and ambitious and are a practical prospector, and if you've got good grit, why, come along. Here's lie is not were you can hake a pile. There's lots of it up here, and such men are digging it out every year. It is estimated that they dig out in the Yukon district in the last season upward of \$800,000, and that isn't a patch on what's there.

out in the Yukon district in the last season upward of \$800,000, and that isn't a patch on what's there.

The great basin of the Yukon is reached practically by but one route, that by way of Juneau and the Chilkoot Pass. This is the shortest, quickest, and cheapest route, and the one taken by fully 95 per cent, of the gold seekers of the interior. The first hundred miles over this route is accomplished by steam navigation from Juneau to Dyea. The next stage is made by cance and sleigh, or by pack train, twenty-seven miles, to Lake Lindeman, where boats are built in which the down-stream journey is continued to the end. The distances from Juneau to the various points along the route are shown in this table, which is compiled from Oxilvie's survey as far as it has been completed, and according to the best obtainable authorities:

Haines Mission (Chilkat)	50
Dyea	00
Head of canoe pavigation.	ini
Rummit of Chilcoot Pass.	1444
Head of Lake Lindeman	000
Foot of Lake Lindeman	677
Head of Lake Bennett	3477
Foot of Lake Bennett	200
Caribou Crossing	2379
Foot of Tagish Lake	2017
Head of Lake Marsh	2417
Foot of Lake Marsh	1,275
Hoad of caffon.	100
Post of endon	243
Foot of canon . Head of White Horse Rapids .	10.04
Tableana Utvos	404
Tahkoena River Head of Lake Le Barge	40
Foot of Lake Le Barge	90
Hootalingua River	100
Cassiar Bar.	110
Big Salmon River	14.25
Vileta Galmon Diver	1411
Little Salmon Biver	1919.16
Five Pingers Rapids.	44
Rink Rapids	1260
Pelly River	0356
White River	MARK
Blowart River	100
Birty Mile Post.	1211
Fort Reliance.	18236
Forty Mile Post.	24
Fort Cudahy	SHIP
Circle City	BUE

Fort Mile Post.

Fort Cudahy

Circle City.

The start from Juneau ought to be made about the middle or not later than the third week of March, but of course miners do go in as late as May. Parties that start in in March can do their own transporting on sleighs across the summit of the Chilkoot Pass and down the lakes to where good timber for boatbuilding is to be found. The start can then be made down the river when the ice breaks, which is much earlier than on the lakes. In that way the mines may be reached about a month earlier than if the loats are built on the lakes and a wait made for the lee to break there. There should be four or five men in each party. One tent, stove, and set of tools will do for all, if such an arrangement is made. One of the party ought to have some knowledge of bonthuliding, for it is an absolute necessity that the boat shall be stanch and substantial. A plain scow of good depth is all that is necessary. It can be easily built, and if it is well done it can be depended upon. No man should attenuate make the journey alone.

Nothing can be of so great importance as the selection of an outfit. It is surprising what a very small difference in the quality of fashion of the articles which make up the outfit distinguishes the really excellent one from one which is absolutely valueless for the purpose intended. Too much stress cannot be laid upon this point. The best place for a man who is going into the Yukon to get his outfit is right here in Juneau. The traders here have the benefit of years of experience in furnishing just exactly the outfits that are necessary, and they can beat the merchants below out of sight in getting up outfits as well as in prices. The actual price here is, of course, a little above that in Seattle or Tacoma, but by the time the prospector has got his outfit from below up here, he is sure to find that it has cost him fully as much as up outfits as well as in prices. The actual price here is, of course, a little above that in Seattle or Tacoma, hut by the time the

to find that a good portion of their goods is of no value for real service, and only encumbers them in their movements. If you've got the notion that everything in Alaska must of nethem in their movements, notion that everything in Alaska must of nenotion that everything in Alaska must of nemember that there are neither rents nor taxes
to be paid up here, and those items consequently do not enter into the cost of outfits.

Another thing which needs to be taken into
consideration in the selection of an outfit is the
knowledge of the country in which the outfit
is to be used. If you're going to Cook's injet, you
don't want a Yukon outfit, and a party with
a Yukon outfit would have some difficulty in
getting along at Cook's Injet. In the matter
of provisions, this estimate is a fair supply for

	աթյ
Flour, pounds 20 Bacon, pounds	

This estimate, of course, may be varied very considerably, and the simple process of multiplication will determine the amounts necessibilities will never come amiss, and too little is only another name for hardship. Enough should be taken to cover any possible delays which may occur at any time by reason of changes in the necessity of the control of

It weighed \$234.

The main articles of consumption in the Yukon last year were flour and whiskey, the number of pounds of each being about the same. The whiskey was shipped to Forty Mile in bond, and that practically put an end to the smuggling through Juneau and transportation over the pass.

Up to the time that the last party left good paramets had come in from all points along the paramets had come in from all points along the

mong, and that practically put an end to the smuggling through Juneau and transportation over the pass.

Up to the time that the last party left good reports had come in from all points along the river. A lot of new creeks had been struck, and several claims that had been but recently onened up had panned out well. All the old claims were up to the mark.

Two men gave six theatrical performances in Circle City last winter and took in \$2,300. They put in last summer in getting out loss for an "opera house," which they expected to have completed and in running order for this winter. The principal amusement in Circle City in the winter time is dancing. A miner will go into a dance hall, and balancing the scale with \$50 in dust he will get dancing tickets at 50 cents each for that amount. Then the whole house, broken miners and all, fill up the scats until the \$50 is gone, when another miner steps up with his long sack of dust and buys a fresh supply of tickets.

One of the best strikes made on the Birch Creek diggings last summer was by Jack Metiregor, an old Juneau man. He employed about thirty men for the whole summer at \$10 a day, and would have paid an ounce a day \$18 if he had had to, to keep the claim running up to the close of the season. He cleaned up \$20,000 above expenses. Last spring the stores got out of potatoes, and as a consequence the miners were in danger of scurvy, Jack paid \$100 for one sack of potatoes to keep his men in good shape.

Circle City bids fair to be the hanner camp of the interior. When the last party left, there were 200 houses within the city limits. The most imposing structure had a public hall 30 by 90 feet, with a pool table in one corner and a billiard table in another. There was a wing on each side, one being used for a restaurant and the other for a bar. One hundred and twenty square logs were used in the main hall aside from the wings and gables. The Alaska Commercial Company's store is 24 by 50 feet. Most of the other buildings in Circle City are dirt roofed. Sod houses ar

BAD LUCK OF A YANKEE TAR. The First American to Suffer Damages from

the Venezuelan Dispute. Perhaps the first American citizen to suffer personal and pecuniary damages as a result of the strained relations between Great Brit-ain and the United States over the Venezuelan matter was an American sallorman on a Brit-ish bark which put into Barbadoes a week or so ago to have the American disciplined by a

British court.

The Captain of the bark summoned the American sailorman before the local Magistrate for refusing to obey lawful commands. The vessel was bound for a South American port. The skipper explained to the court that his mate was a true-born Britisher, while the sailorman was a spread-cagle Vankee. During the voyage down to the Caribbean a dispute arise between the mate and the sailor over the relations of their respective countries in regard to Venezuela. The dispute became a quarrel, which at last reached serious dimensions, and, the Cantain said, finally became so acute that the sailorman refused to take orders from any "bloody Britisher." The Captain feared that evil might result, and that anyway the proper navigation of his vessel might be endangered, to be wanted the court to cancel the American sailoris contract with the bark. The skipper evideality proved his case, as the patriotic Vankse was not inclined to take any water, anyway. The Magistrate sentenced the sailor to twenty-four hours' imprisonment, and while he was in jail the bark sailed away. American sailorman before the local Magis-

EVERY ONE OF THEM A DUDE BOWERY BRUMMELS AND SWELLS ON THE FIFTH AVENUE.

Great Variety of the Dudes to He Seen In New York Streets-The Actor and the Foreign Swell-The Englishman and His Clothes-Witty Boys and Chapples. In every little country town there is sure to

be some man who dresses above his fellows. He is the dude of the community. When you ome to the city, however, one dude is not enough to go round among a couple of millions of inhabitants, and though now and then so and so is mentioned as "the best-dressed man in New York," this opinion is hardly trustworthy. There are dudes in every street of the city-generally one dude to a street and certainly no one can be so skilled in the science of dudedom as to pass correctly a suap judgment on the question of who is the finest specimen in the metropolis.

There is, besides, another difficulty in pick-

ing the dude from the dross in a large city. Most American cities are such composites of nationalities that he who is a tony dresser in the Chinese quarter bears no resemblance to the Beau Brummels of Fifth avenue, or the scal-ring sports of Eighth avenue or the



Indeed, the need of an exhaustive scientific study of dudes and their uses is felt by every one interested in the real urban life of to-day. Either a museum of dudish regalia from the good old colony times until now, or an annual bench show of all breeds of dudes

would undoubtedly meet with the support and

approval of New Yorkers, at least. Last fall at election time there were a good many energetly young Goo Goos who created a bad impression while on their campaign of education through the east side. This was due largely to their ignorance of what was the proper thing to wear before an assembly of voters in this part of town. They often stood forward on the cart tail in checked suits and billycock or gussie hats, apparel which is everlastingly associated on the mind of the east sider with the especial livery of the Willie Boy. The professional politicians of this section know that a person clothed from top to toe in black must be a pretty hopeless kind of fool if he fails to win a respectful and gra-



THE VISITING ENGLISHMAN.

cious hearing on east side audiences. Eastsiders insist that a man shall approach them with his best foot foremost and his best cont on his back, but that coat must be black, or the political adventurer will surely receiv the marble heart, or even the frozen fist,

the marble heart, or even the frozen fist,

The regular Bowery dude, however, allows a little more color in his make-up. His coat and vest are black, but his trousers are sky blue or coffee colored, with silvered stripes. Either of these shades makes a brilliant and pleasing contrast with the black, which, when set off 17 some heavy jevelry, will get the wearer into any social club he may long for.

But this combination grows dingy and dull whenever it recklessly appears on Broadway in competition with the denizeus of that rain-bow-hued thoroughfare. Here it is that the greatest variety of fashionable makes may be found. There is, of course, the actor, who has lately taken to a slik hat that tapers off at the top with a kind of Mother Goose effect. The loud-minded hatters tried to force this tile on the glided youth of Fifth avenue, but its architectural proportions were too extreme, and their courage failed when it came to parading the street under such a roof.



THE POREIGN SWELL.

The actor, especially if he is prosperous and has a good figure and certainly he won't be the one without having the other, will wear white or checked spats, lemon yellow gloves, a tan paddock coat, and patent leather hoots that come to a needle point at the toe. It needs no Sheriock Holmes to size up such a gandy figure as the thesterfield of the Rialto, who plays the hero with talent and address. Of course Sherlock would discover a neglected dab of grease paint on one temple to clinch his argument, but that proof would be unnecessary.

The German dude also affects long, tight-fitting overcoats, but principally because he has a good figure, due to his military training in the fatherland. His general outline is about the same as the actor gentleman's, but his tester runs more to sombre and rich colorings, so that to see him in the distance you would say he was a widower overwhelmed by becoming and well-cut mourning. It is only on close insiention that you discover that his coat is not black but a princely purple, and notice his white gloves and crimson-striped shirt.

There is another kind of foreign bird of paradise who dresses just as wonderfully as the princely purple, and notice his white gloves and crimson-striped shirt.

There is another kind of foreign bird of paradise who dresses just as wonderfully as the older, though still, of course, a bachelor. His advancing years warrant his supporting a nair of very pointed moustaches and a very pointed beard. His hat, whose lustre is only equalled beard. His hat, wh

horizon of a lion that has been trained to walk on his hind legs. Anybody who has ever had a suit of clothea made in London will recognize its prototype on



THE GENTLE LOAPER. OPERA SINGER.

any real live Englishman. Of course, it is thecked. At presentathe prevailing tints are bright blues, reds, greens, and any other colors in the spectrum. The seat of the trousers is situated somewhere between the knees of the stalwart Briton. This is said to be done so that a man can ride horseback in his street clothes if he doesn't want to but has to. It is certainly very far-sighted in the English tailor to provide for cuch an emergency. The coat is called a sack because it should fit nowhere except around the neck, where it can easily be adjusted to any conformation by means of a pucker string. It is never a good bet to set down a person wearing one of these suits as a dude. An Englishman is only a dude at home in his frock coat. When he travels he never brings it with him, nor does he bring his slik hat. He wears his checked suit winter or summer, and packs his extra things in a hat box. There is no compromise on this man in the shape of the gentle loafer who wears a checked suit with coat tails at all hours of the day. He rather affects informality of dress, and is only scrupulously particular about his linen, shoes, and waistcoats. But as these are now the main points of consideration among the fine-feathered cavaliers



A1 DUDE. THE WILLIE BOY.

on Fifth avenue, he may be set down as a dude with reservations.
The out-and-out Beau Brummels of Fifth The out-and-out Beau Brummels of Fifth avenue fall naturally into two classes, according to height. A man can't be an A 1 dude if he is under 5 feet 10. There must be a certain magnificence about a perfect fop which can only be gained by height. Besides which, a fatrly tail man can wear any and every kind of garment that fashion decrees, but his smaller second becomes not a dude at all, but a Willie Boy, or, worse still, a chapple, if he attempts to follow the lead of the A1 man.

There are principally Willie Boys to be found on Fifth avenue during week days. But on Sunday morning, between church and luncheon these disappear, or are metamorphosed by some secret process, and only A 1 dudes are seen.

HALL BEDROOM WHEELING. A Trendmill Device for Recling Off Centu-

ries at a Standstill. Two machinists of Berkeley, Cal., have perfeeted and patented a racing machine by the use of which a bicyclist may reel off "centuries" in a hall bedroom, or a series of races may be held in a parlor. The machine affords every

opportunity for the scorcher to get in all his fine points of manipulation, and he is able to do all the hard work and experience all the sensations that he would on a circular track or a country road. Of course a scorcher doesn't care for scenery, but only for "centuries." The racing machine, or "bleycle track," as

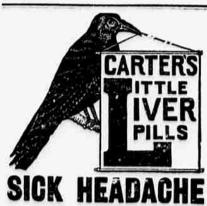
the inventors call it, consists of a set of three hardwood rollers secured in a frame. The rollers are four inches in diameter and two and one-half feet long. Two rollers are placed five and one-half inches apart, and the third roller is placed a bicycle length further ahead in the frame. The hind wheel of the bicycle rests on the two rollers set together and the fore wheel on the first roller. The lower part of the tire of the hind wheel sots about an inch below the level of the upper surface of the rollers. This prevents the bicycle from slipping. The rollers are connected by a strong rubber band.

The bicycle is placed on the rollers, the bicyclist is held up until he has secured a good start, and then he and his machine are released and he can pedal away for dear life, recling off miles of revolutions, but not advancing an inch. The wheels hold their position securely on the rollers, and are subject to the same conditions as they would be on an ordinary road. The apparatus is exceedingly simple, but many experiments had to be made before the proper size and exact adjustment of the rollers could be fixed. The track is substantially the same as that on which horses race at record pace in a theatre.

In front of the rider is a dial, which is connected with the rollers on which he is riding. As he pedals, the finger on the dial revolves accurately, marking the distance the rider has travelled. For racing, a double machine is made. Two sets of rollers are set in a frame facing rach other. The machine has been tested by bicyclist experts and under the auspices of bicycle clubs, and is said to be entirely successful. frame. The hind wheel of the bicycle rests on

"I suppose," said Mr. Billtops, "that in great measure we appreciate blessings according as they fill the real or fancied requirements of our individual existence; there are many things individual existence; there are many things that some of us might not recognize as blessings at all that to others might seem downright boons. Thus I hear Mrs. Billtops saying with cheerfulness, as she surveys the crumpled white mass of things just taken in from the line, that it has been 'a lovely drying day.'

"Now, there was a feature of the day that I had nover even given a thought to, but which to Mrs. Billtops appears as a blessing to be grateful for."



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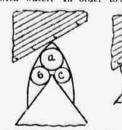
COLLISIONS AT SEA.

HOW ADMIRAL MAKAROFF WOULD

MINIMIZE THEIR EFFECTS.

The Need of Filling Bulkhends with Water to Test Them-Small Compartments Side of Larger Ones-The Novel Device of Removable False Noses for Ships. A few weeks ago Rear Admiral Makaroff of the Russian navy addressed the Hong Kong Chamber of Commerce on the subject of mini mizing the effects of collisions between ships. It is a subject which is constantly growing in importance, because while formerly ships were of heavy and thick wood, which resisted colows better than thin steel plates, and while the old construction, with fiddle bow, as it was called, bowsprit and rigging, checked the force of the shock before the water line could be reached, modern ships, travelling at far higher speed and with greater displace-ment, have vertical bows so strong and sharp that the moment collision rakes place the skir of the ship struck is penetrated from gunwale to water line.
Looking first at the now familiar and gen-

eral device of water-tight bulkheads, Admiral Makaroff suggests that one need is to have them properly tested, which can only be done by filling them with water and seeing whether they will undergo the strain. This is a thing now assumed rather than practically tested Again, when a collision occurs at one of the bulkheads, two large compartments are filled with water. In order to avoid this, he pro-



poses that each main bulkhead should be sup plied with extra small water-tight compartments at the side of the ship, from ten to twelve feet wide. Then instead of two big compartments being filled with water only one large compartment and the little one would be

As to collision mats, although Admiral Makaroff proposed them a quarter of a century ago, and all nations now have them, he does not look to their use by merchant ships in general, because they require a special drill of crews to handle them.

But the most novel and interesting device proposed by the Admiral, and the one which formed the chief subject of his address, is that of building buffers, or, as he calls them alse noses, for vessels, with a view to deaden the effect of a shock. It is familiar experi-ence that the vertical stem acts as a knife, so that very little energy is required to penetrate the ship run into. Thus the Crathie, which sank the big ocean liner Elbe, was very small, and going at moderate speed. Admiral Maka roff timself saw a similar case in the Bosporus. when the Azove, going only at two or three knots, made a hole in the French mail steamer Provence, and the latter went to the bottom. Again, at Chefoo, he saw a torpedo catcher of 400 tons and light construction touch the cruiser Pamiat Azova, and make a hole big enough for the entrance of a tall man, although armov at the water line fortunately protected her there. Even a torpedo boat of 70 tons has

armor at the water line fortunately protected her there. Even a torpedo boat of 70 tons has penetrated the skin of a man-of-war on striking her. Such facts as these convince Admiral Makaroff that the direction in which to prosecute efforts to prevent damages from collision is in that of checking the force of the blow.

As an illustration of how this may be done he quotes the device of Admiral Boutakoff, who, thirty years ago, having wished to give his Captains practice in the ramming of ships, employed two gunboats of 300 tons for this juriose, and each boat was entirely surrounded by a huge fender two feet in diameter, made of very light trees and branches bound firmly together so as to present a yielding shield. This protection was sufficient to preserve the one vessel intact when rammed by the other. It is true that the speed of the vessels was never higher than six knots, but the concustion at the moment of ramming was so great that not one of the men on beard could keep his feet. This proves that from the moment one ship touched the other to the moment when the vessel was stopped the colliding ship made a progress of may be only one foot. But in the case of the Pamiat Azova the crew of the torpedo catcher were not in the least affected by the force of the blow. This shows that the resistance of the ship's side when the skin is penetrated is small compared with the resistance of the ship's side when the skin is penetrated is small compared with the resistance of the skin before penetratian.

Such is the contrast between the two cases mentioned. Admiral Makaroff himself, only a few months ago, made an interesting experiment to illustrate it on board his flagship, Emperor Nicholat. A model representing a ramming vessel was moved by a weight so as to ram a model which represented the amidship section of a ship. A small buffer of a quarter of an beat hickense of cotton cloth was made

ming vessel was moved by a weight so as to ram a model which represented the amidship section of a ship. A small buffer of a quarter of an both thickness of cotton cloth was made which could be adjusted to the ram. When the blow was dealt without the buffer, the ram cashy penetrated the skin of the other model, and the ramming vessel made an inroad of three quarters of an inch, and cut a hole two inches in length, which in reality means eight feet. When a similar experiment was made with the buffer on the ram, an inroad of only a quarter of an inch was sufficient to arrest the progress of the vessel, and the skin was only slightly bent and not penetrated.

This experiment leads up to the conclusion that what is needed is to put a false nose on the bow of a ship in order that it may act like a buffer. Of course if this false nose could be made permanently flat the problem would be solved at once. As Admiral Makaroff expressed it, if you attempt to move a man back out of danger with the point of a sharp knife you may kill him in the process, whereas the flat of the hand simply pushes him; but since merchant ships will not submit to the increased resistance to speed given to a flat bow, the problem is that of allowing the bow to be sharp and yet so constructed that it shall collapse and present a flat surface when it strikes another vessel.

An idea prevails that the energy of a blow in ramming is so great that no means can be devised to absorb it without injuring the ship's

another vessel.

An idea prevails that the energy of a blow in ramming is so great that no means can be devised to absorb it without injuring the ship's skin. But Admiral Makroff shows that in the case of guns the tremendous force of the recoil is taken up by the hydraulic buffers within a space of two feet. Again, we have the fact that engines are reversed before a collision takes blace. Hence he believes that his proposed device of a false nose would be found gractical in merely bending the skin of the ship and inside ribs and beams without making a hole. He would have the ship constructed as now, and the false nose made so as to be put on and off.

"I makine that it ought to consist of very thin sheets of steel, say one eighth of an inch, and should run in front of the ship as shown upon the diagram. Many little ribs and stays inside ought to give enough strength to the skin to enable it to resist the force of the waves. The space between the false shell and the nose of the ship ought to be filled with some soft fibrous substance and powder). This substance is intended to play the rôle of a cushion and the shell will play the rôle of a cushion and the

marketen the boits and remove the smashed false mose in order that the ship may continue her voy age as if nothing had happened.

What, then, would be the objections to such a scheme? In the first place, it would have to be made compulsory, in the Admiral's opinion, to have ships constructed with false noses, because, he says, the false nose might weigh about two tons and cost perhaps \$1,000, and to that extent the ship would be dearer, and carry less cargo than its competitors. An insurance company might see the advantage of the system, and yet if it insisted on such a construction in all its policies, it would lose custom to its rivals. Hence he thinks that the matter ought to be regulated by law, provided its views are sound.

It may be added that, in the account given by the Hong Kong Paulo Press of Admiral Makaroff's paper, and of the resulting discussion, Commodore Boies and Mr. Whiting, both of whom observed the experiments with the models, attested their success. Mr. Whiting considered that Admiral Makaroff's proposal 'rests on an entirely sound basis. The problem we have before us is to so direct the energy that it shall crush up useless material and so save the vessel from foundaring. Admiral Makaroff very wisely limited his methed to row speed. Take a 10,000 ton ship going fiften knots. The genergy in that vessel is so enormous that it would be very difficult to frustrate it. But when you come to a speed of four or live knots there is very little doubt indeed that some appliance of this kind would do a very great deal to promote the safety of the vessel struck.

Mr. Whiting further thought, however, that hat case the ship would be deprived of her power of ramming, which is one of her means of offence.

Commodore Boies agreed with Mr. Whiting that in the case of a vessel going at a high speed the effect would be very disastrous, however when the first much the ramming might be blunted. He spoke, however, of his personal observation when the Utopia an Italian transport at Gib-

raltar, drifted down upon the bow of the battleehip Anson, her eteering grar being carried away. A large hole was bored in the Utopia's side, and after drifting a few hundred yards further she sank, many beople being drowned. That was a case of simple drifting, and had the Anson's bow had a false collapsing nose, loss of life might have been averted.

Heturning to the test of bulkheads, Mr. Whiting said that twenty years ago, except in the case of about a score of vessels, there were hardly any such provisions for cases of collision, but nowadays much was done. He also pointed out that while bulkheads of moderate size in the British navy were actually filled with water, not only to the water line, but five feet above it, in testing them careful calculations would be made of the layer as to their strength of resistance. But Admiral Makaroff resterated that as there was pressure not only on the sides of bulkheads, but on the watertight doors, and on the steam pipes passing through, the actual test by filling, though it might take a week's time and some cost, was best.

NOTES ON SCIENCE AND INDUSTRY.

A rule or two is given in the Aluminum World regard to obtaining the best castings with aluminium bronze, in order to avoid the diffi-culties which are so frequently met with in melting. An essential point mentioned is the special care to be taken not to overheat the metal, the fact being that, if it be heated to too high a temperature, the aluminium will oxidize, the oxide which is thus formed making the entire casting what artisans term, "dirty," and the metal will also be spongy from the presence of large amounts of occluded gases; the scum, too, which floats on too of the molted braze in the crucible must be prevented from going into the body of the casting, this being practicable by providing the casting with suitable skim gates. The greatest trouble in making bronze castings, however, arises from the shrinkage of the metal, which is very great a difficulty which is overcome if the casting have a large sinking head and "risers," it being necessary, however, In many cases to make the sinking head fully as large as the casting. from the presence of large amounts of occluded The fact appears that, even at this late day,

the Neapolitan provinces maintain their superiority in the production of strings for musical instruments, and, as formerly and from time immemorial, the greatest care and dex terity are required on the part of the workmen. It is said that the treble strings are particularly difficult to make and are peculiar to Naples, as the Neapolitan sheep, from their small size and leanness, afford the best raw material. The small intestines are used for this purpose, and are first very carefully scraped, then steeped in alkaline lyes, clarified with a little alum for four or five days, until well bleached and swollen; they are next drawn through an open brass thimble, and pressed against it with the nail in order to smooth and equalize the surface, after which they are washed, spun, or twisted, and sulphured during two hours, being finally polished by friction and dried; sometimes they are sulphured twice or thrice before being dried, and are pollshed between horsehair cords. These strings are noted for their strength, transparency, brilliancy, and clearness of tone; and, besides Naples, the industry is carried on in various other Italian localities, namely, Gobbio, Foligno, Bologna, Venice, Verona, and Bassano. scraped, then steeped in alkaline lyes, clari-

Photometrical tests have shown, a German writer remarks, that for the production of a light of one normal candle power 0.6 liter of acetylene is required per hour if proper burners are used, while for the same lighting power ten to twelve liters of coal gas used in ordinary burners are consumed. Acetylene, however, possesses different qualities, which are of a somewhat dangerous nature, and have to be considered with caution its action upon cop-per or copper alloys, for example, forming a per or copper alloys, for example, forming a brownish substance which is highly explosive, such metals, therefore, being unsuitable for use either inside the conduits or for glow bealies if acetylene is employed as a lighting material, while iron is of neutral conduct toward acetylene; in the next place, a mixture of acetylene and air is explosive, the highest exploding power being reached in a mixture of one part of the former and twelve of air; finally, like all carbureted hydrogen gases, acetylene is very poisonous also. Quick notice is afforded by acetylene, even in a very small quantity, by its bad odor, so that the dangers arising from leaks are in a degree restricted. It is also to be noted that acetylene can be formed during the storage of calcium carbide, also as soon as the latter comes into contact with water or absorbs hydrogen from the air.

In view of the fact, says an Austro-Hungarian journal, that black iron stoves do not in all cases suit a room which is painted in light colors, and of the attempts made, unsuccessfully, to use upon them a water glass paint, Herr Kratzer, a Leibzig chemist, has been experimenting in this direction with very satisfactory results. The colors, he finds, may be blue white, borium sulphate, zinc white, be rium chromate, vellow ochre, uranium oxide, green chromium oxide, cobalt green, green ultransarine, ultramarine bine, cadmium oxide for yellow brown, English red or caput mor-tuum for brown, brown oxide of manganese, burned terra di Siena, red iron colors, chrome red; these are to be mixed with warm soft water, distilled or rain, and diluted thirty-three degrees or sulphur-free water glass. Thus one part of water glass may be mixed with two of warm soft water, and one part of bronze pow-

is that recently brought forward by a New Zen-land inventor, Dr. Gaze, for the use of chlorido ment of caustic soda to recover the chlorine and | been in great demand by the lieutenants of the bromine for use, and the recovery of the gold different i residential candidates, and any and from the solution by electrolysis instead of by everything in the way of officeholding is being chemical precipitants. The most important feature is said to be the method adopted for making the solvent used in gold extracting, by making the solvent used in gold extracting, by means of a containing vessel of about three feet diameter and two feet deep. In this vessel are placed a number of porons cells filled with plain water, each porons cells filled with plain water, each porons cell having a number of earbon rods placed in it, and the containing vessel itself filled with a strong solution of chloride and bromine of sodium, and more carbon rods are immersed in the solution; the whole is fitted with one pole of a powerful dynamo machine, and the other set with the other pole. On passing a strong current of electricity through the electrodes the saits are separated, the chlorine and bromine uniting, and the choride of bromine thus formed is forced into a vessel overhead.

This condition of affairs has created much rivalry among the leaders in the South, and contesting delegations will come to the St. Louis Convention from nearly every Congress district. If Harrison had remained in the field as a candidate he would have received with one pole of a powerful dynamo machine, and the other pole. On passing a strong current of electricity through the electrodes the saits are separated, the chlorine and bromine uniting, and the chloride of bromine thus formed is forced into a vessel overhead.

and the other set with the other pole. On passing and the other set with the other pole. On passing a strong current of electricity through the electrodes the saits are separated, the chloring of them were off-ceholders under his Adminster and the other set with the other pole. On passing a strong current of electricity through the electrodes the saits are separated, the chloring difference of mime thus formed is forced into a vessel overhead.

The peculiar value of ambergris in the most created in the Boston Tomeria. From this it appears that the essence of this remarkable sabstance is obtained by mixing three ounces of it with one gailon of pure alcohol, and not until after a month is it reads for use this, however, being kept only for mixing, being far too strong, and not until it has antered in minute proportion into the longuest does in produce those agreeable and characteristic refrainces on well known. A sambergris is the most costly of the animal perfumes, the situation. Illil is also for lickfinitely, and wants to control the patronage just as lynch minute proportion into the longuest design of the control the patronage just as lynch minute proportion into the longuest design of the control the patronage just as lynch minute proportion into the longuest design of the control the patronage just as lynch minute proportion, and in the tomograph of the control the patronage just as lynch of the control in patronage just as lynch

AUSTRALIA'S GREAT HEAT.

INTENSE SUFFERING CAUSED BY A HOT WAYE IN THE ANTIPODES.

Horses Dropped Dead In the Streets, Untils Were Burned Up, and Springs Were Dried-All the Continent Amieted.

Mail advices bring details of the unprece-

dented spell of intense heat which afflicted Australia during the first two weeks of this year, of which a brief account was received by telegraph. The terrific wave of heat seems to have enveloped the whole of the Australian continent. For two weeks the temperature was nowhere below 900 in the shade, and in some places it reached 122° in the shade. The results of the heat, as told in the Australian news pers, are almost incredible. Horses dropped dead by scores on the streets of the cities, and in the agricultural districts horses, cattle, and sheep died by, hundreds in the fields. Many big bush fires occurred as a direct result of the great heat and consequent dryness, and in many regions the sky was overcast with dense clouds of smoke, which made the heat more intense, and greatly added to the sufferings of all living things. It is stated that grapes were actually cooked on the vines, and all green crops were simost ruined. Springs, creeks, and wells dried up, and for some time there was every prospect of a water famine after the heat. The Sydney Herold of Jan. 7 says of the condition of affairs in that city on the preceding day during the first week of the heat, when it was not yet at its worst:

"The pavements were burning people's feet and the horses in the busses fell in the streets. sunstruck, as though shot. A lurid haze covered the city, and the sun was like a globe of blood. No such day has been experienced in Sydney for a quarter of a century. " In some business places where large numbers

of workpeople are employed business might as well have been suspended for all that was done. The heat was so thoroughly oppressive that the employees absolutely could not work. On public and private building contracts, in many in-stances, a similar condition of affairs existed. and in some of the foundries a four hours' spell

The temperature in Sydney on the day of which this was written was 105° in the shade at the Government observatory, and if the official register of temperature in Sydney bears the same relation to the street temperature as is the case in New York the heat endured by ordinary folk can perhaps be imagined. At Croki, on the same day, the temperature was 121° in the shade, and at Forbes it was 115°. In the latter district large numbers of sheep and cattle died of the heat and for lack of water. The country thereabout was like a desert every blade of grass having been burned brown. Farmers were unable to work in the fields during the day, and in most districts the labor-ers went out at night, as soon as the moon rose, to try and save what remained of the blasted crops. Bands of horses and cattle were in sev-

during the day, and in most districts the laborers went out at night, as soon as the moon rose,
to try and save what remained of the blasted
crops. Bands of horses and cattle were in several places hommed in by bush fires and died in
the flames. At Ferth, 177° in the shade was
registered. Five persons died of the heat in one
day, and people slent outdoors, in the streets and
on the public squares and in the parks, by hundreds. The water supply was shut off several
hours each day in order to stop the great waste
caused by people using it in an effort toget some
relief from the heat.

The heat continued without intermission for
a week after tins. The hottest day ever
experienced in Sydney was on Jan, Li, when
108.5° in the shade was registered at the
Government observatory. The streets of the
city were washed down with water from
the hydrants all through the middle of the
day, in an attempt to lower the blistering
temperature. Husiness was at a standstill, and
the number of deaths of horses in the streets
was enormous. During this day the consumption of water in Sydney was 19,500,000 gallons.
During this the second week of the great heat
a temperature of from 100° to 117° was registered all over the colony of New South
Wales, and from all towns and agricultural districts came the same stories of deaths from the
heat and general prostration. In the last week of
the heat there were twenty-two deaths from
sunistroke in and around fourke, where the
temperature was 117° on several days. Cattle
simply dropped dead in the fields and all crops
were practically ruined. The heat was greatest
in New South Wales, but the temperature was
almost equally high, and entirely unprecedented
in other parts of Australia.

An unusmal feature of the heat wave was that
a high wind blew over the whole country during
most of the time, in some blaces reaching a
velocity of lifty and more miles an hour. But it
was a wind like the blast from a furnace, and it
brought increased suffering instead of some relet. It blew un the dea

COLORED REPUBLICAN LEADERS. The Majority Seem to Favor McKinley, with Reed a Second Choice.

WASHINGTON, Feb. 28.- Many prominent colored Republicans who are leaders in their respective States have been here lately to one part of water glass may be mixed with two of warm soft water, and one part of bronze powder be worked up with fifty, by weight, of the diluted water glass; it may be necessary to give the color a thorough preliminary wetting with very soft water, particularly if the color be an earticle the color mix with the water glass, but no more color should be mixed than can be used within two to four hours. The iron should be perfectly free from grease and rust, and should be treated with a scratch brush—then three coats, at twelve-hour intervals.

One of the look over the political situation as affected One of the most notable processes of its kind the home of influential colored political leaders like ex-Senator Bruce, Congressman Lynch, Col. Percy Carson, ex-Congressman Langston, of bromine as a solvent for gold, the employ- a d others. The colored politicians have

promised them if they will only carry delegates to the Convention favorable to certain candi-dates. This condition of affairs has created